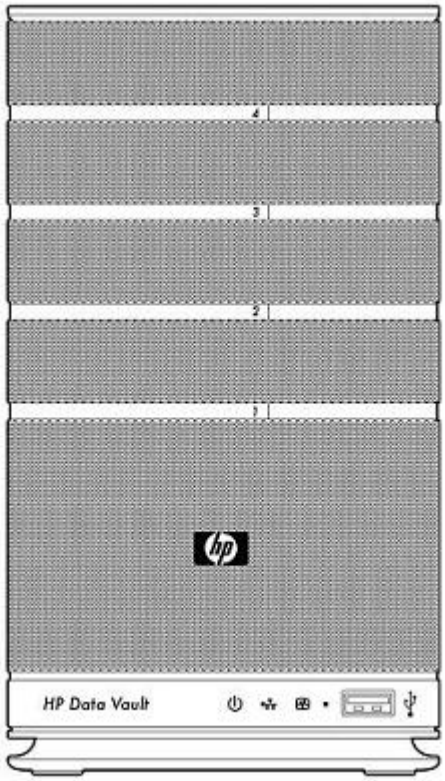
Overview

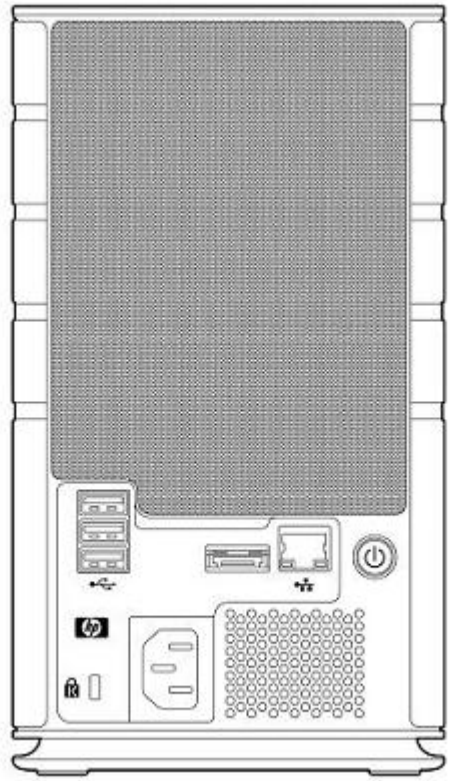
Store it, Secure it, Share it!

You have more pressing concerns than how to backup and share your data but you know it needs to be done and you know it would benefit your business.

The HP X500 Data Vault series provides a simple and cost effective solution for a small business to store, secure and share data. The HP Data Vault, based on Microsoft Windows Home Server, provides a user friendly interface and easy installation and management. The HP Data Vault provides you with automated backup for up to 10 PC clients and Mac's on your network and provides additional protection with high tech features like folder duplication and de duplication. To provide for your file sharing needs, the HP Data Vault offers both local file sharing and remote file sharing via a custom URL which is accessible from any web browser. The HP Data Vault comes with a total of 4 bays for internal storage expansion and also offers external USB and eSATA ports for additional external expansion. The HP Data Vault also includes some additional media file collection and sharing functionality. Store it, secure it, share it.



HP X500 Data Vault front view



HP X500 Data Vault rear view

Models

HP X500 Data Vault

HP X500 Data Vault series is in a compact desk top form factor. All models are very easy to install and manage, making them perfect for a small business.

HP X510 1TB Data Vault	Q2050A
HP X510 2TB Data Vault	Q2051A
HP X510 3TB Data Vault	Q2052A

Features and Benefits

Full System Protection	The HP Data Vault provides complete backup and restore of up to 10 PC's and Mac's. After installing the included client software, the HP Data Vault backs up the client every day without you having to manage the process.
Easy Computer Restore	In case of a PC or Mac failure, getting your computer back up and running is simple and easy with included computer restore disc. Just insert the restore CD into the optical drive, restart the computer and select the image to restore. It's that easy!
Automated Daily Backups	Automated daily backup provides peace of mind. Simply install the client software on any PC on your network that you would like to protect and the Data Vault does the rest.
Protect Your Critical Files	The HP Data Vault lets you choose which file folders are the most important. With the ease of a mouse click, you can tell the Data Vault to duplicate that folder to a second hard disk drive. If a hard disk drive was to fail, your data will still be safe on the second hard disk drive.
Restoring A File	Users can browse Daily backups. Unlike other image backups, you can open any backup, select a single file or multiple files and copy them back to your computer. In addition, customers can integrate backups with an online backup service. Nothing could be easier!
Built In Anti-Virus Protection	The HP Data Vault comes with an add-in free trial of McAfee Anti-Virus software which a customer can choose to install. You can also use your existing Anti-virus to scan the Data Vault.
User Access Control	Using the HP Data Vault management console you can set Read/Write, Read Only or No Access privileges for each user, to each shared folder. The HP Data Vault administrator also controls the remote access privilege for each user.
Secure Remote Access	Secure Remote access to the HP Data Vault is realized by requiring a 128-bit secure https session via a custom URL.
User Authentication	Users must login and authenticate, with a strong password, to access the HP Data Vault shared folders or PC applications either locally or remotely.
Local File Sharing	Share files on the local network easily via the Data Vault shared folders icon or through the HP Data Vault Control Panel. Create shared folders based on project, customer or whatever structure best suits your needs.
Remote File Sharing	Use the remote computer like you are sitting right in front of it. Securely access your Data Vault from any web browser via a custom web address that you create. You can also access and control PC's remotely using Windows 7, Windows Vista Business, Windows XP Pro and other operating systems.
Personalized Web Address	Create a custom web address of your choosing. Access your HP Data Vault through your custom web address from any internet connected computer. Web addresses are registered through HP's partner TZO.com. Your custom web address is free for the first year and cost a nominal yearly amount to maintain.

Features and Benefits

No Monthly Fee	Other online services charge a monthly fee to access your files, but with your HP Data Vault that feature is already built in.
Easily Add More Storage	Easy to expand to 6TB+ with any standard 3.5" SATA I or SATA II hard disk drive. The HP Data Vault supports hot swapping of hard disk drives which means you can add capacity without power down the device. The HP Data Vault grows as your business grows.
External Capacity Upgrades	Four USB and one eSATA port are available to add additional storage beyond the 4 drive bays.

Operating System	Microsoft Windows Home Server

The Windows Home Server operating system backup engine stores data at the cluster level. Clusters are typically 4 kilobytes (KB) in size. The backup database records include clusters and hashes of these clusters (a hash is a number that uniquely identifies a cluster based on its contents). The database also contains information on the structure of a hard disk volume (NTFS information).

During the backup process, a cluster from one computer that is identical to a cluster from a different computer is sent to the server exactly once and stored exactly once. Because Windows Home Server backs up multiple computers (space) every day (time) to a single database, it in essence supports "single instancing of computer backups across space and time."

When the cluster size is different among volumes, no data is shared between the volumes in the backup database. By default, every newly created NTFS volume gets a cluster size of 4 KB. A few volumes that started out as FAT and were converted to NTFS have a cluster size of 512 KB. The only way to get any other cluster size is to format the volume yourself and explicitly request a different size.

NOTE: You can maximize the efficiency of the Data Vault backup database by ensuring that all of the hard drives on your computers are formatted with NTFS and with a cluster size of 4 KB.

The backup database is a collection of files that can be broken into three categories:

- Global files - Files that track the history of all computer backups and all of the other files in the backup database.
- Cluster files - Files that store the actual cluster data from the computers. These are usually in 4096 byte increments. These files grow to 4 GB in size before a new file is created. These files are stored as Data.XXXX.Z.dat, where XXXX=cluster size in bytes, and Z=0,1,2,…
- Computer specific files - A boot record and data for each hard drive volume that gets backed up from each computer.

Microsoft Windows Home Server Drive Extender Software	Windows Home Server Drive Extender

Windows® Home Server Drive Extender enables you to use internal and external hard drives for additional storage. In addition, you can enable Folder Duplication for specific shared folders. Maintaining two copies of a shared folder on separate hard drives helps protect against the failure of a single hard drive.

Features and Functionality

The core features of Windows Home Server Drive Extender are:

- Predefined Shared Folders: Your device is preconfigured with shared folders named Photos, Music, Videos, Public, and Software. From the Data Vault Windows Home Server Console you can specify user permissions for these folders and create new shared folders. You can easily move files and folders from your local computers into the shared folders by using a drag-and-drop operation.
- Easy to add more storage: From the Data Vault Windows Home Server Console, you can add a new hard drive by following a simple wizard. The amount of storage available to your shared folders and local computer backups increases proportionally. The hard drives you add can be either internal or external (for example, USB 2.0 or FireWire).
- Shared Folder duplication: If you have two or more hard drives, the Windows Home Server

operating system helps protect against hard drive failures by ensuring that files stored in shared folders are automatically duplicated to multiple hard drives.

Benefits

Windows Home Server Drive Extender offers the following benefits for storage solutions:

- Allows the seamless addition of more hard drives: As you add more hard drives, they are treated as a single large pool of available storage space. You no longer need to deal with drive letters (such as E:, F:, and G:) because you can add more hard drives.
- Works with internal and external hard drives: You can add internal or external (for example, USB 2.0 or FireWire) hard to increase the available storage.
- Shared Folder Duplication: Duplicating designated shared folders provides protection against hard-drive failure by storing important data on separate hard drives. Duplication is configurable for every shared folder-so a shared folder can have multiple copies with each copy stored on a separate hard drive.
- Makes hard drives and their content easy to move: It is easy to remove outdated hard drives. You can store the content on other hard drives in the system and remove old or small hard drives.

Windows Home Server Drive Extender is different than and more powerful than a redundant array of independent disks (RAID) in several ways:

- You can use any hard drive, any time. You are not restricted to adding more hard drives of the same type and size. When you want to grow your storage, you can buy and add any hard drive you like.
- Internal and external hard drives can be used to grow your storage.
- Drive removal is easy. You can remove older, smaller hard drives and add new, larger hard drives to upgrade your storage capacity.

Microsoft Restore Software

The HP Data Vault provides bare metal backup and restore of up to 10 PC's and Mac's.

To restore individual items from a previous backup stored on the HP Data Vault, a virtual volume driver is loaded on the computer. This allows a previous image of a hard drive to be mounted, as if it were a read-only volume, across the network. This driver opens a connection to the Data Vault, and it receives the relevant clusters from the device to build a virtual view into what a given hard drive looked like on a given day. The read-only volume is displayed in Windows Explorer where a user can drag the files and folders that they want to restore to the Windows Desktop of the computer they are using.

Important:

A computer that is behind your firewall and has the Windows Home Server Connector software installed can create a backup without further authorization or authentication. However, restoring individual files and folders and restoring computers using the Computer Restore CD requires the Windows Home Server password.

Client Backup OS Support Matrix

	Windows 7	Microsoft Windows Vista (32 & 64-bit)	Microsoft Windows XP Home (SP2) or XP Professional (SP2)	Microsoft Media Center Edition 2004 (SP2)	Mac OS X	Linux
Automated Backup	X	X	X	X	X	
Remote Access	X	X	X	X	X	X
Remote Control	X	X*	X	X		

* with WHS Power Pack 3 operating system update insalled

* Must be Windows Vista Ultimate

Management

Microsoft Windows Home Server Console

The Windows Home Server Console provides you with the ability to see which computers have been configured to be backed up and the backup status of each of your computers. After you install Windows Home Server Connector on each of your computers, they are automatically backed up each night to your HP Data Vault.

Processor / Cache Memory		**X510 1TB** Intel® Pentium® E5200 (2.50GHz, 2 Core)	**X510 2TB** Intel® Pentium® E5200 (2.50GHz, 2 Core)	**X510 3TB** Intel® Pentium® E5200 (2.50GHz, 2 Core)
Chipset	Intel® 5520 Chipset			
Memory	Type	PC2-6400 unbuffered DDR2 800 MHz		
Storage	Hard Drives	**X510 1TB** Standard 3.5" SATA Drives; External: USB External HDD or eSATA HDD.	**X510 2TB** Standard 3.5" SATA Drives; External: USB External HDD or eSATA HDD.	**X510 3TB** Standard 3.5" SATA Drives; External: USB External HDD or eSATA HDD.
Maximum Storage Capacity (raw)		**X510 1TB**	**X510 2TB**	**X510 3TB**
	Internal SATA	7.0TB	7.0TB	7.5TB
	Internal plus External	9.0TB+	9.0TB+	9.5TB+

Power Supply	X510 1TB	X510 2TB	X510 3TB
	Internal Universal Power Supply	Internal Universal Power Supply	Internal Universal Power Supply

BUILT-IN SLEEP MODE: Conserves energy and saves money. When the Data Vault automatically switches to the built-in sleep mode, it consumes only 1W of power.

Form Factor	X510 1TB	X510 2TB	X510 3TB
	Tower	Tower	Tower

NETWORK SUPPORT:

- Connects easily to the home network through a built-in Ethernet port.
- 10/100/1000 (Gigabit) RJ45 Ethernet - Supports both wired and wireless PCs (via a wireless router).

Options

Add More Storage

HP X500 Data Vault comes standard with at least one installed SATA Drive

To Add drives: To insert a new hard disk drive, go to the WHS console to "add it" to your volume. The overall capacity increases, and the LED glows solid aqua to indicate that the hard disk drive has been added to the overall storage capacity. The additional drive can also be set to backup content from other hard disk drives on your HP Data Vault.

Add Optional Software

HP X500 Data Vault	McAfee Antivirus Protection
	KeepVault Online Storage
	Disk Utilities
	Multimedia Management Tools
	Many Other Add-Ins

Warranty

HP X500 Data Vault comes with a standard 3-0-0 warranty (3 year limited hardware/software support, 0 years labor and 0 years onsite, next business day response). Software media is warranted to be free of physical defect for a period of 3 years from delivery.

Services Included with the Product	One year of HP Software Support, standard 9x5 business hours (software advisory and remedial software telephone support, new version license rights, and media and documentation distribution service).
HP Services Awards	HP Services continues to be recognized for service and support excellence by customers, partners, industry organizations and publications around the world. Recent honors and award reflect our services team's dedications, technical expertise, professionalism and uncompromising commitment to customer satisfaction. For a list of all our awards, please visit: http://h20129.ww2.hp.com/services/cache/77318-0-0-225-121.html.
Additional Services Information	For more information about HP Care Pack Services for Storage, please visit: http://www.hp.com/hps/storage If you have specific questions, contact your local HP representative. Contact information for a representative in your area can be found at "Contact HP" http://www.hp.com

HP X500 Data Vault

System Unit	**Dimensions** (H x W x D) (with bezel)	25cm x 14cm x 23cm (9.75" x 5.5" x 9.875")	
	Weight (approximate)	All hard drives, power supplies, and processors installed (out of box)	1TB: 5.00kg (11.02lbs) 2TB: 5.65kg (12.46lsb) 3TB: 5.75kg (12.68lbs)
	Input Requirements (per power supply)	Rated Line Voltage	90 - 132 VAC, 180 - 264 VAC
		Rated Input Current	3.5A
		Rated Input Frequency	47 to 63 Hz
	System Inlet Temperature	Operating	5° to 35°C (41° to 95°F) at sea level
		Non-operating	-30° to 65°C (-22° to 149°F)
	Relative Humidity (non-condensing)	Operating	5 to 95% relative humidity (Rh), 38.7°C (101.7°F)
		Non-operating	5 to 95% relative humidity (Rh), 38.7°C (101.7°F)
	Altitude	Operating	2300 m (7546 ft)
		Non-operating	4600 m (15092 ft)
	Acoustic Noise	Less than 30dBA	
Power	**Power Supply**	Internal Universal Power Supply	
	Input Voltage Range (Vrms)	100 to 240	
	Frequency Range (Nominal) (Hz)	50/60	

Environment-friendly Products and Approach	**End-of-life Management and Recycling**	Hewlett-Packard offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: http://www.hp.com/go/green. To recycle your product, please go to: http://www.hp.com/go/green or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner. The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: http://www.hp.com/go/green. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

Technical Specifications

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For hard drives, 1 GB = 1 billion bytes. Actual formatted capacity is less.